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436. Contralateral mnemonic effects with ipsilateral sensory inflow. R. E. MYERS AND R. W. SPERRY. *Div. of Biology, California Inst. of Technology, Pasadena.*

Simple visual discriminations learned with one eye are retained with the other eye by cats having all crossed optic fibers destroyed at the chiasma. To find out whether or not the mnemonic traces involved are confined entirely to the trained (ipsilateral) hemisphere, 14 chiasma-sectioned cats were taught 1 or 2 visual pattern discriminations with a mask covering one eye. On completion of training, varying portions of cortex were removed from the hemisphere on the trained side. These removals varied from restricted ablation of the visual *areas I* plus *II*, to complete cortical ablation extending forward to the edge of the posterior sigmoid and coronal gyri. Following a postoperative rest period of 11–24 days, the cats were tested for retention with the untrained eye. The results obtained appeared not to be affected by the extent of cortical removal beyond the minimal lesion, but did differ for the 2 discriminations used. In the case of the less difficult discrimination (horizontal vs. vertical striations) there was nearly perfect retention in 5 instances, partial loss in 7, and apparently complete loss in only one. In both of 2 cases where the more difficult discrimination (solid circle vs. open ring) was used, transfer to the untrained eye was completely absent, although this same discrimination has been shown to transfer at a high level in the absence of cortical lesions. The findings demonstrate a mnemonic carryover via the corpus callosum into the hemisphere not directly receiving the sensory information. The carryover was sufficient to effect partial to complete retention of simple discriminations but was not sufficient to support the performance of more difficult discriminations.